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Before The
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

In the Matter of)

Amendment of the Commission's)
Rules to Establish a New)
Personal Communications)
Service)

Gen. Docket No. 90-314
ET Docket No. 92-100
RM-7140 et al.

To: The Commission

COMMENTS OF
CITY UTILITIES OF SPRINGFIELD, MISSOURI

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SUMMARY

Utilities have extensive unmet needs for a communications technology which will give them economical access to the homes and premises of utility users, particularly electric customers, so as to improve the efficiency of their operations, moderate peak demand and control and monitor critical operational and safety functions. PCS, when married to existing trunk communications facilities, seems to be the perfect technology to satisfy the "last mile" communications problem. In addition to this telemetry and data usage significant use can be made by utilities for mobile voice communications, both for internal purposes and to satisfy needs of other business or municipal users.

Thus, utilities promise major potential benefits in terms of: (1) significantly improving the cost efficiency of utility operations; (2) improving the safety of operations; (3) minimizing environmental impact through alarming of critical functions and reducing peak demand; and (4) improving the efficiency of spectrum usage by combining voice with data use.

However, if the Commission does not adopt a policy that will give utilities a reasonable opportunity to develop this technology and apply for authority to utilize PCS, these potential advantages will be lost. Accordingly, the Commission is strongly urged to set aside 10 MHz of spectrum in the 2 GHz band for utility PCS use for a limited period of time.

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COMMENTS OF
CITY UTILITIES OF SPRINGFIELD

City Utilities of Springfield, a municipal utility under the jurisdiction of the Board of Public Utilities of Springfield, Missouri ("City Utilities"), by its attorney, hereby files its comments in the above captioned proceeding in response to the Commission's Notice of Proposed Rule Making and Tentative Decision released August 14, 1992 ("Notice"), stating as follows:

Introduction

City Utilities has an extensive utility operation, providing electric, gas, water, and bus/transit services within the City of Springfield. It prides itself on being in the vanguard of technical developments that will enhance and improve its public services, including their efficiency and environmental compatibility.

In this regard it has installed some 90 miles of fiber optic communications cable connecting its facilities and has plans to extend fiber within the next two years along its entire utility backbone routes which will total between 150 and 175 plant miles. This fiber is used extensively for voice, data and telemetry

communications in connection with the various utility operations and to provide communications to and between various municipal offices. At present City Utilities spends some \$20,000 per month on data and telemetry communications (apart from capital costs relative to communications plant). It is seriously exploring new technologies and undertaking tests with the objective of making its communications network more effective and improving the efficiency of its entire operations. It believes PCS offers important possibilities which can address inadequate communications and unmet needs of many utilities. Like many utilities which have extensive modern communications plant, City Utilities believes that PCS can be a perfect technology when married to existing or expanded backbone communications facilities.

The Commission's Proposal

In its Notice the Commission proposed to allocate three band segments for PCS: in the 2 GHz band, 1850-1895 MHz and 1930-1975 MHz, tentatively allocated in three blocks of 30 MHz each; also in the 2 GHz band, 1910-1930 MHz for low power non-licensed applications; and in the 900 MHz band, 901-902 MHz, 930-931 MHz, and 940-941 MHz for narrow band usage in 50 kHz blocks. Relative to the existing users in the 2 GHz bands, the Commission suggested a possible fixed transition period or involuntary relocation, referencing comments received in ET Docket No. 92-9.

In terms of licensing the Commission indicates that it is inclined toward service areas larger than those employed in the

cellular services. It seeks comment on four options: (1) the 487 "Basic Trading Areas" as defined by Rand McNally; (2) the 47 "Major Trading Areas" as also defined by Rand McNally; (3) the 194 telephone LATAs; and (4) nationwide. Relative to eligibility the Commission proposes to exclude cellular licensees from holding a PCS license in the same area and raises the question of whether a local exchange carrier ("LEC") should be eligible in its exchange area. An option raised is whether an LEC should be allowed to acquire a smaller 10 MHz block, either by adding an additional 10 MHz to the PCS allocation or allowing the subdivision of a block.

Concerning licensing mechanics the Notice recognizes three options: comparative hearings, lotteries, or competitive bidding (if allowed by Congress). It tentatively rejects comparative hearings and focuses on lotteries and the various considerations relative to the conduct of lotteries.

Comments

City Utilities supports the allocation of frequencies for this new service. However, it takes no position on whether the 2 GHz band segments proposed are the most appropriate choice and would have the least impact on existing users.¹

¹ It is noted that the American Public Power Association and the Utilities Telecommunications Council, of which organizations City Utilities is a member, have taken issue in ET Docket No. 92-9 with the Commission's proposed bands for emerging technologies and the possible relocation of existing microwave users in the 2 GHz band. While City Utilities is not a user of 2 GHz microwave frequencies, it can understand the concern that many utilities have over possible disruption of critical microwave communications facilities caused by potential

The thrust of City Utilities's comments in this proceeding focuses on its concern that the Commission may establish rules and policies for the new service which will make it very difficult for utilities to make use of this important advance in communications technology. Hence, the primary purpose of these comments is to alert the Commission to these concerns and suggest ways that the rules can be structured so that this new service is susceptible to the widest and most beneficial public uses.

1. PCS Promises Substantial Advances In Utility Efficiency.

With growing environmental and cost constraints, utilities have come under increasing pressure to improve the efficiency of their operations and in particular to moderate peak demand, especially for electric generating capacity. Many technologies have been developed that have the potential for major advances in the way utilities control their operations so as to better satisfy these pressures. More than any other single factor, communications has proven to be the key to greater operational efficiency and safety. Among such technological advances are the ability to: monitor power/volume at the user level, read meters, alarm critical performance parameters (e.g., gas leaks, water

relocation. Hence, the comments herein should not be taken as minimizing those concerns. Rather, it is the position of City Utilities that current users of any bands that are allocated for PCS should be adequately protected, either in terms that PCS can operate on an interference free basis with those existing users or that fair transition rules and policies are implemented. It appears that the Commission has commenced to seriously address these concerns in its First Report and Order and Third Notice of Proposed Rule Making in ET Docket No. 92-9, released October 16, 1992. It should continue to do so as these issues are relevant to this proceeding.

pressure and transformer performance), manage power/volume loads including the ability to shed loads at peak usage periods, and to monitor critical environmental and safety functions. City Utilities and a number of other technologically sophisticated utilities have developed systems to improve the efficiency and safety of their operations. However, the effectiveness of such systems is severely limited by the lack of a cost effective communications link with the end-user. Without such a link on a wide spread basis, the most promising pay-offs for these advances cannot be achieved.

The problem with the "last mile" connection has been, as with a number of other communications systems, largely one of cost. The cost of wiring to each home from the closest substation or other communications interface point, and the wiring within the home, has been prohibitive. While there has been limited experimentation utilizing existing communications systems (e.g., telephone lines and cable television systems), these have not proved satisfactory for a number of technical and cost related reasons. Moreover, utilities have typically been reluctant to invest substantial sums in communications systems that are not designed to meet their precise needs and over which they have no operational control, particularly as it relates to the quality and reliability of the transmission medium.

PCS appears to offer the best solution to this last mile problem of any technology on the horizon. Since the terminal units necessary for wireless links to control and monitoring

functions in the home, at business user premises, and at other intermediate points involve only data and telemetry, they should be small and relatively inexpensive to manufacture in volume. Further, because these data communications typically involve only narrow band, sporadic bursts of data for a very short duration, they can be employed without substantial impact on the voice capacity of PCS systems.

2. Utility Use Is Fully Compatible With The Use For PCS Contemplated By The Commission.

As indicated above, the data and telemetry requirements can be multiplexed with voice communications on a subcarrier basis. Hence, such use will not impair or diminish the voice capacity and capability of a PCS system. While most of the control, monitoring and other utility-type functions that would be used involve fixed terminal equipment, this is not universally the case. For example, City Utilities would use the data/telemetry capability of PCS to identify the locations of its bus/transit fleet and its repair and service vehicles, provide mobile alarm functions and improved service dispatching. Further, there would be significant voice communication requirements relative to those same units.

Nonetheless, such utility related use would not nearly tax the capacity of even a 10 MHz PCS system. Therefore, a utility operated PCS system could and should be used for a wider array of services. For municipally owned utilities, such as City

Utilities, a portion of this wider use would likely be employed in support of local governmental communications requirements.²

In addition, most utilities would probably seek a wider use for PCS in terms of offering service to the general public or special categories of business users. Such services could be easily accommodated once a PCS system is operational. These services would offer a welcome stream of revenue as the utility develops and implements its utility based system requirements. Thus, a utility operated PCS system could and should provide a substantial amount of non-fixed communications consistent with the Commission's purpose of establishing this service primarily for mobile communications.

The above usage, including mobile voice and fixed/mobile data and telemetry uses, should not conflict with either the purpose envisioned by the Commission for PCS or the proposed technical standards for either the 2 GHz³ or the 900 MHz bands. All of the telemetry and data applications mentioned above can be

² A number of local governmental categories (e.g., police, fire and emergency vehicles) have traditionally been substantial users of mobile communications. Other categories spend much time in vehicles (e.g., social workers, building inspectors, school bus drivers, and refuse collectors) but have difficulty justifying the cost of mobile communications despite its obvious advantages. With a municipal utility PCS operation the cost of mobile communications should be substantially reduced and new options opened for improved communications and efficiencies for many governmental functions.

³ The reference to the 2 GHz band as used here and at other places in these comments is intended to reference a general area of the radio spectrum and not necessarily construed as an endorsement of the 2 GHz bands proposed by the Commission for PCS in the Notice. See note 1 above.

accomplished within the power limits and bandwidths specified in the text of the rules attached to the Notice.⁴

3. Without The Practical Ability To Become PCS Licensees Utilities Will Not Be Able To Achieve The Important Advances Promised By This Technology.

It is logical to ask the question, why does a utility have to be a licensee to be able to take advantage of PCS? There are several reasons. First, and perhaps foremost, utilities have not had success in the past in interesting common carriers or other potential providers (such as cable operators) in developing systems and hardware that are designed to accommodate their special requirements. While there has been much talk of the capability of the telephone network or cable television systems being utilized to accommodate utility requirements, particularly in terms of access to the home, little has actually been done other than a few pilot or experimental projects. A major reason for this is that although it seems simple enough on the surface, more thorough investigation reveals substantial problems. Special systems configurations, terminal equipment and multiplexing requirements add cost and complexity.

Moreover, there are major questions of responsibility and liability. For example, if a communications interruption results

⁴ The one suggested change would involve expanding the purposes of the service somewhat as identified in proposed Section 15.253(a). In this regard it is recommended that a new subsection (3) be created, reading as follows:

(3) Telemetry communications consisting of two way data communications to monitor and control utility and other operations and for vehicle location systems.

in the failure of a portion of an electric grid, causing significant damage to transformers and related equipment in addition to power outages over a substantial area, who would be responsible for the ensuing losses? Or if a communications related alarm failure results in substantial property losses or even the loss of life, who would be responsible?

For these reasons utilities, especially electric utilities, have in the past been reluctant to turn over the responsibility for critical control communications to third parties.⁵ Nor have those third parties shown any real interest in accepting the technical, cost and liability burdens associated with such communications once they have investigated the requirements and associated problems.⁶

4. A Frequency Set Aside Is The Only Logical Policy That Will Give Utilities A Reasonable Opportunity To Acquire PCS Licenses And Incentive To Invest Resources In The Development Of New And Innovative Uses.

As the Commission is aware, there is every expectation that once rules are adopted for PCS a flood of competing applications for PCS authorizations will be filed. The Notice indicates that the Commission will likely employ a lottery scheme of one sort or another as the method for choosing among competing applicants.

⁵ Electric utilities typically operate their own control and alarm communications, employing wire, cable, fiber or microwave, often along their power rights of way.

⁶ For a more extensive general discussion of the types of communications needed to meet utility requirements and the difficulties encountered in relying on others to provide critical communications needs see the comments of the Utilities Telecommunications Council in ET Docket No. 92-9 filed June 5, 1992, at pages 31-36.

In such a circumstance, the odds of any utility being lucky enough to win a lottery would be very slim indeed. Thus, without an exception, it is unlikely that utilities will be able to take any advantage of the major advancements promised by PCS technology.

There are ways in which the Commission could address this problem. First, the Commission could set aside a frequency block or portion thereof for utility use. Such a set aside need not be permanent. After a period of time the Commission could reevaluate its use. If substantial use or progress is not being made, the Commission could re-allocate the frequencies or open them up for filing by other applicants.⁷ The Commission may want to establish minimum criteria for such a utility application to ensure that the set aside spectrum would be used consistent with parameters established by the Commission.

Alternatively, utilities could be given lottery preferences. While this approach would avoid the set aside, it has the disadvantage of not assuring utility use, only improving a utility's chances of being a lottery winner. Unless the preference were very substantial, it would probably accomplish little other than improving a utility's odds of winning from extremely slim to very slim. In short, preferences may sound

⁷ The Commission should not make the period of time less than three or four years inasmuch as significant demonstration and development projects will have to occur to prove the practical application for widespread utility application. In the very near future City Utilities intends to file an experiential application with the Commission for the purpose of developing and demonstrating the practicality of various utility-type uses.

reasonable, but in this situation they would accomplish little if anything.

Thus, if the Commission finds that a utility's operation of PCS would afford a substantial public interest bonus, which City Utilities strongly believes it does, then a set aside of one sort or another would be the only viable solution of accomplishing this objective. Such a set aside is not new. Indeed, with only two frequency blocks available for cellular radio, the Commission set aside one block for telephone company applicants when it established the service in 1981.

Indeed, this Notice also seems to suggest special treatment for telephone companies relative to PCS. It indicates that despite concerns relative to cross-subsidization and discrimination the Commission has tentatively concluded that LECs which do not hold cellular licenses should be allowed to provide PCS in their service areas because there may be economies of scale and it may encourage them to develop their wireline architecture in a PCS-friendly manner. It goes on to suggest that LECs might even be allocated a separate portion of the 2 GHz spectrum, albeit with 10 MHz of bandwidth rather than the 30 MHz proposed for other licensees.⁸

City Utilities does not object to the special treatment the Commission has tentatively concluded should be afforded to LECs unless utilities would be forced to compete with LECs for the same spectrum. Given the developmental problems mentioned above

⁸ See Notice at paras. 71-80.

relative to utility applications and the lack of similar problems for telephone company applicants, such competition would be unfair. As a practical matter, the telephone companies would likely file their applications at the earliest possible time and effectively cut-off future utility use before most utilities would have time to evaluate and develop the potential for the practical application of PCS.

If it can be concluded that the very generalized and somewhat conjectural public benefits cited by the Commission justifies set aside spectrum for LEC PCS operation, it seems to go without saying that the more definitive public interest potential benefits offered by utilities would certainly justify treatment for utilities no less favorable than that contemplated for LECs. More than simply economies of scale or wireline architectural improvements which the Commission foresees for LEC use of PCS, utility use of PCS offers more concrete benefits that have the ability to: (1) significantly improve the cost efficiency of utility operations; (2) improve the safety of operations; (3) minimize environmental impact through alarming of critical functions and reducing peak demand; and (4) improving the efficiency of spectrum usage by combining voice with data use.

In short, the Commission is urged to allocate an additional 10 MHz of spectrum for qualified utility operation.⁹ This 10

⁹ It is suggested that "qualified utility operation" include a demonstration sufficient to satisfy the Commission that the proposed use will satisfy the public interest benefits

MHz of spectrum can be a portion of the standard 30 MHz block or, preferably, the additional allocation as suggested at paragraph 78 of the Notice. From a policy standpoint an allocation in the 2 GHz band makes a great deal of sense.¹⁰ If after several years the Commission finds that the major advances offered by utilities are being realized, then the public interest is clearly in making the set aside permanent. On the other hand, if the Commission then concludes that little effective use is being made, it can reallocate the band for other uses or open it up for other PCS applicants as indicated above.

In terms of utility PCS service areas, it is suggested that rather than the geographically broad service areas mentioned at paragraph 60 of the Notice, a narrower geographic area be defined that is closer to the areas served by utilities similar to that contemplated for LECs.

justifying the special treatment, such as: (1) the applicant is a franchised or otherwise authorized utility within its proposed PCS service area; (2) the proposed PCS system will be used in a way that will significantly improve the operational efficiency and control of the utility operations; and (3) the proposed system will accommodate both voice and data and will involve substantial mobile or non-fixed use.

¹⁰ The Commission as an alternative could consider other portions of the radio spectrum to satisfy the utility need, e.g., as in the 900 MHz band. The narrow bandwidth of 900 MHz would impose some limitations as well as the difficulty in securing available unused spectrum. All in all, the 2 GHz band would be preferable and, given the fact that the presently proposed bands would eliminate its further use for utility microwave use, it would constitute a reasonable quid pro quo.

Conclusion

For the reasons stated above the Commission is urged to find that a portion of the spectrum allocated for PCS be set aside for utility use.

Respectfully submitted,
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